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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/042,232	01/11/2002	Werner Siol	215503US0	9789

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EXAMINER

ZALUKAEVA, TATYANA

ART UNIT PAPER NUMBER

1713

DATE MAILED: 05/07/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/042,232	Applicant(s) SIOL, WERNER	
	Examiner Tatyana Zalukaeva	Art Unit 1713	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 April 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) 14-17 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 and 18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 1-18 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
 If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☒ None of:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
 * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
 a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>4</u> | 6) <input type="checkbox"/> Other: |

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DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of Group I, claims 1-13 and 18 in Paper No. 6 is acknowledged. The traversal is on the ground(s) that "the ***process*** (emphasis added-T.Z) for producing a crosslinking agent and a crosslinked polymer containing the crosslinking agent may share a common element, namely an asymmetric methacrylic crosslinking agent". This is not found persuasive because although "sharing" the common element, these claims are unrelated as to the method by which this crosslinking agent is produced. This is a situation analogous to that discussed in *In re Thorpe*, 227 USPQ 964 (CAFC 1985), wherein the product-by-process claims are rejected over a product, which **although prepared in a different manner**, appeared to be the same as the claimed product. Therefore, the method of making the crosslinking agent is unrelated to the polymer having this crosslinking agent as a component.

The requirement is still deemed proper and is therefore made **FINAL**.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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3. Claim 9 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The recited "...wherein the hydroxyacrylate is based on a polytetrahydrofuran chain..." is indefinite because the instant specification does not provide any explanation or guidance on what is meant.

Specification

4. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: the recited in claim 9 wherein the hydroxyacrylate is based on a polytetrahydrofuran chain..." has no support in the instant specification.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

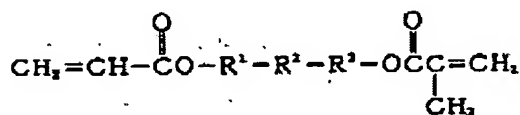
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6. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. Claims 1-13 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 6487608 in view of "Organic Chemistry" by John McMurry, 1988 (hereinafter referred to as McMurry), pages, 753, 758, 759 or separately in view of any one of the following (each one individually): Mazur et al (U.S. 5,149,642) or Emmons (U.S. 5,243,069) or Matheisen et al (U.S. 5,219,479) or Thanawalla et al (U.S. 4,618,703) or Powanda et al (U.S. 4,859,792).

JP'608 discloses polymerisable compounds containing acryloyloxy and methacryloyloxy groups in one molecule of formula (I),



wherein (R¹, R³ =(poly)ethylene oxide chain of -(CH₂CH₂O)-_n (n = 0-10); R² = an alkylene, arylene or cycloalkylene). The polymerizable compounds are prepared by dehydrating carboxylic acids and alcohols in the presence of catalysts e.g. sulphuric

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acid under reflux of solvents e.g. benzene: (see abstract) with the temperature range and time within the claimed range.

The disclosure of JP'608 differs from the instant claims by using **methacryloyl chloride instead of methacrylic acid anhydride**, as per instant claims.

However, acid chlorides and acid anhydrides are equally and conventionally used in the art of organic chemistry for esterification.

Thus McMurry teaches basics of esterification reactions, and as two conventionally used method of making esters from alcohols bearing one or more OH groups, discusses using acid chlorides, as a nucleophilic acyl substitution (page 752, Fig.21.7 and page 753). On the same page McMurry further discusses that esterification of alcohols is strongly affected by steric hindrance. On pages 758, 759 McMurry discusses the use of acid anhydrides for esterification, also as nucleophilic acyl substitution reaction. Thus McMurry recognizes the equivalency of acid chlorides and acid anhydrides for esterification of alcohols.

Each of the cited U.S. Patents show that esterification reaction with acrylic or methacrylic acid derivatives is conventionally carried out either with (meth)acrylic acid chloride or with (meth)acrylic acid anhydride as **equivalent compounds for esterification**.

Matheisen: (col. 5, lines 44-47);

Emmons: (col. 6, lines 27-43);

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Mazur: (col. 7, lines 35-40);**Thanawalla** (col. 3, lines 15-30);**Powanda** (col. 1, lines 15-21)

In the instant case substitution of equivalent methods of esterification (in terms of esterifying agent) requires no express motivation, as long as the prior art recognizes equivalency, *In re Fount* 213 USPQ 532 (CCPA 1982); *In re Siebentritt* 152 USPQ 618 (CCPA 1967); *Graver Tank & Mfg. Co. Inc. V. Linde Air products Co.* 85 USPQ 328 (USSC 1950), and therefore a person skilled in the art would have found it obvious, to utilize either acid chloride or acid anhydride based on their recognized equivalency for the particular reaction with the reasonable expectation of success, lacking the criticality of the use of specific anhydride vs. chloride.

8. Claims 1, 2, 5-10, 12, 13, are rejected under 35 U.S.C. 103(a) as being unpatentable over SU 630249 in view of "Organic Chemistry" by John McMurry, 1988 (hereinafter referred to as McMurry), pages, 753, 758, 759, or separately in view of any one of the following (each one individually): Mazur et al (U.S. 5,149,642) or Emmons (U.S. 5,243,069) or Matheisen et al (U.S. 5,219,479) or Thanawalla et al (U.S. 4,618,703) or Powanda et al (U.S. 4,859,792).

9. SU'249 discloses method of making an asymmetrical acrylate methacrylate of polypropylene glycol (col. 4, line 27). The method comprising two steps: preparing a

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monomethacrylate of 1,3-propylene glycol (col. 4, lines 28-40), then the product which is monomethacrylate of propylene glycol reacts with acryloyl chloride (col. 5, lines 1-5). Reaction time is 0.5 hours and 1.5 hour after adding all components (col. 5, line 3 and line 9) and reaction temperature is 70°C (col. 5, line 9). Reaction occurs in dimethylacetamide as a solvent (see claim 2, and col. 5, line 5) in the presence of 0.01 g alpha-nitrozonaphthol (col. 5, lines 5, 6). In col. 2, lines 22-25 SU'249 teaches that the content of symmetrical esters is not greater than 0.5-0.6%. The product is filtered, dried and purified by fractional distillation. (col. 5, lines 10-15).

The disclosure of SU' 249 differs from the instant claims by using **acid chloride instead of acid anhydride**, as per instant claims.

The rationale applied above to remedy the deficiencies of JP is incorporated herein in its entirety.

Therefore, the combination of references renders claims 1-13 and 18 prima facie obvious and properly rejected under 35 USC 103 (a).


10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tatyana Zalukaeva whose telephone number is (703)305-8819. The examiner can normally be reached on 9:00 - 5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu can be reached on (703)308-2450. The fax phone numbers for

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the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0651.


Tatyana Zalukaeva, Ph.D.
Primary Examiner
Art Unit 1713

Tatyana Zalukaeva
Primary Examiner
Art Unit 1713

April 23, 2003